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1 RECORD OF ORAL HEARING  
2 UNITED STATES PATENT AND TRADEMARK OFFICE  
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4  
5 BEFORE THE BOARD OF PATENT APPEALS  
6 AND INTERFERENCES  
7

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8 *Ex Parte* FREDRIK LINDQVIST,  
9 ANTONI FERTNER, and PAL FRENGERT  
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13 Appeal 2009-001682  
14 Application 09/584,796  
15 Technology Center 2600  
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17  
18 Oral Hearing Held: June 9, 2009  
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20  
21 Before JOSEPH F. RUGGIERO, MAHSHID D. SAADAT, and  
22 ROBERT E. NAPPI, *Administrative Patent Judges*.  
23

24 ON BEHALF OF THE APPELLANTS:

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31 The above-entitled matter came on for hearing on Tuesday, June 9,  
32 2009, commencing at 9:00 a.m., at the U.S. Patent and Trademark Office,  
33 600 Dulany Street, Alexandria, Virginia, before Jack L. Becker, Notary  
34 Public.

1 MS. BOBO-ALLEN: Good morning. Calendar No. 7, Appeal No.  
2 2009-1682. Mr. Lastova.

3 MR. LASTOVA: Good morning. Hi. Let me -- could I get --

4 JUDGE NAPPI: Thank you.

5 MR. LASTOVA: You're welcome.

6 Well, good morning. Today's appeal is directed to echo cancellation,  
7 and this technology is particularly beneficial for multicarrier modulation  
8 techniques, what are very important these days for all our wireless  
9 communications, OFDM, discrete multi-tone, those kinds of systems. And I  
10 want to direct your attention real quick, so we're all thinking about the same  
11 thing, to figure 1 in the patent application. That figure there, I'll give you a  
12 moment to turn to it, just shows real quickly what we're talking about.  
13 We're talking about a transmitter that's transmitting information over some  
14 kind of channel, in this case it's a subscriber line, through a hybrid circuit.  
15 There's a far end modem over here that's important to understand. We don't  
16 show that, but there's a far -- that's the receiver. That's the person you're  
17 trying to talk to, for example, or send the data to. And then you can see that  
18 through the hybrid, because the hybrid circuit doesn't match exactly, the  
19 impedance of the subscriber line, there's an echo that comes back. It's  
20 reflected through the hybrid into the receiver there, and that obviously is  
21 undesirable.

22 That kind of echo cancellers are known generally -- they try to model  
23 the echo and of course remove it from the receiver, and one of the problems  
24 with these echo cancellers is two things, intersymbol interference and  
25 intercarrier interference, ISI, ICI. Intersymbol interference is where you  
26 have on the same channel you'll have multiple symbols, and what happens is

1 they, they get delayed through time dispersion and various effects on the  
2 channel, and they tend to overlap. And so it's very difficult then to detect  
3 what the value of the symbol is, because of course you've got the prior  
4 symbol and the subsequent symbol overlapping the current symbol you're  
5 trying to detect. Intercarrier interference, we have a symbol period, and then  
6 you have subcarriers in different frequencies in different -- in the frequency  
7 domain, but at the same time they're overlapping, and at the same time  
8 again, interference hard to handle.

9 What the inventors realized was is that we could handle echo ISI and  
10 echo ICI using a frequency domain echo canceller. And that can specifically  
11 compensate for the specific echo ISI and the echo ICI. We're going to go  
12 ahead and you'll see in the claims, we have a lot of embodiments which I  
13 don't have time to go through here in the patent application, but I just want  
14 to direct to you a couple of the claims and some of the key features here.

15 If we look at independent claims 1 and 18, you can see there that we  
16 estimate the echo in the frequency domain using a frequency domain model  
17 of the echo path channel determined using a first matrix of coefficients and a  
18 second matrix of coefficients. One matrix is trying to model completely  
19 now the, the ICI, all right, in the frequency domain, and the other matrix  
20 trying to completely model the ISI for, for the previous symbol in the  
21 frequency domain.

22 If we look at claims 12 and 19, we have a special case in which we're  
23 trying to estimate the echo where the first matrix happens to be a column  
24 vector. Claim 35 allows you to use either a matrix or a column vector.  
25 Once you've estimated this echo in the frequency domain, some of the  
26 claims remove the echo in the frequency domain. Some of the claims allow

1 you to remove the echo in the time domain. The key point here though is  
2 all the claims estimate the echo in the frequency domain.

3 What are the advantages here? Well, by calculating the echo  
4 completely in the frequency domain, the multicarrier systems which I've  
5 talked to you about, which are prolific these days, we're already able then,  
6 because we're already in the frequency domain, to use those frequency  
7 domain symbols without having to do additional fourier transforms and data  
8 processing, so it's particularly efficient. It's faster. We don't have to make  
9 the complicated movements that were, you know, in the transforms, and we  
10 save memory. And most importantly, we're able to compensate for echo ISI  
11 and echo ICI, and that's very important as we'll see.

12 The rejection, we've got a 103 -- two 103 rejections that we're talking  
13 about today. We've got Ho and Dowling, and we've got Chaffee and  
14 Dowling. The Examiner's rejections are more or less the same, if you will,  
15 basically taking an echo canceller either in Ho or in Chaffee, a traditional  
16 echo canceller, and trying to combine it with Dowling which is a precoder  
17 which I'll talk to you about the differences between a precoder and echo  
18 canceller shortly.

19 As I said earlier, all the claims require that the echo be estimated in  
20 the frequency domain, and claims 1, 12, 20 and 30 remove the echo in the  
21 frequency domain. So if we look particularly at claims 1, 12, 18 and 19, the  
22 Examiner admits in his answer that Ho and Chaffee, those are the two  
23 primary references, don't teach estimating echoes in the frequency domain  
24 used in the combination of the matrices that we talked about earlier, the first  
25 and second matrices and the current symbol and the previously transmitted  
26 symbol.

1           So then he turns to Dowling. Dowling describes a precoder. This --  
2   you can think of this as a pre-equalizer. It's not an echo canceller, and so he  
3   precodes the signal now before he transmitted across the channel. He's  
4   trying to compensate ahead of time for the distortion that you're going to  
5   have when the signal is transmitted over the channel before it gets to the  
6   receiver. So why is he doing that? He's doing that because he's hoping to  
7   have a cheap receiver, because normally because of the distortion over the  
8   channel, the receivers have to have an equalizer. Equalizer translates into  
9   essentially more money, okay, more complexity, more power, because they  
10   have to process the signal to deal with all this distortion. He's saying let's  
11   just take care of it in the transmitter, all right. Now whether that works or  
12   not, I don't know, but that's what he's trying to do.

13           All right, Dowling then is worried about, as we saw in the, in the  
14   figure 1, he's, he's worried about this far end receiver, the far end modem.  
15   He's not concerned here with the near end, all right. And what he's trying to  
16   do then is make this compensation. He's not at all concerned with echo  
17   cancellation.

18           JUDGE NAPPI: Yeah, but now if he makes that, that compensation,  
19   isn't that compensation going to affect the echo?

20           MR. LASTOVA: Right.

21           JUDGE NAPPI: Because you're transmitting a different signal?

22           MR. LASTOVA: Okay, right. So the Examiner tried to make that  
23   argument, and what the Examiner was trying to say was well, look, he sends  
24   it to the -- the signal goes over the transmission channel, and somehow isn't  
25   the echo the same thing as, as the signal that's transmitted over the  
26   transmission channel. Well, that's actually not the case, and actually I think

1 the best way for us to handle that is to have a drawing, because I like  
2 pictures. Hopefully you do too.

3 If you look at page 3 in our reply brief, there's a very simple picture,  
4 which I think can really help us understand this issue and the distinction. So  
5 it's this -- I'll just -- so you have a sort of a sense where -- at the bottom  
6 there's -- if you can see right here it's sort of just A and B, near end, far end,  
7 and what you have here is you have -- the way we tried to explain it is --

8 JUDGE NAPPI: Which reply brief is this?

9 MR. LASTOVA: Pardon me?

10 JUDGE NAPPI: Which reply brief is this?

11 MR. LASTOVA: It's the first reply brief.

12 JUDGE NAPPI: Okay, that's not --

13 MR. LASTOVA: There's a supplemental reply brief and then there's  
14 a first reply brief.

15 JUDGE NAPPI: Okay, we don't have that one. It's not in our file.

16 JUDGE RUGGIERO: Not in our working file?

17 JUDGE NAPPI: No.

18 MR. LASTOVA: Well, that's a shame. Let me do this. So let's --  
19 if -- can I step just a little closer?

20 JUDGE NAPPI: What's the date --

21 JUDGE RUGGIERO: Yeah, okay.

22 JUDGE NAPPI: What's the date on that?

23 MR. LASTOVA: Okay, I'll find that for you. So that's dated  
24 February 15, 2007, page 3.

25 Let me just come a little closer here. I'll -- the picture is very simple  
26 here. You can see the near end. You can see the far end. Okay, what we try

1 to illustrate here is here is the transmission channel, and here is what we call  
2 the echo channel, okay. And what's interesting here, of course, you can see  
3 immediately with this picture they're not the same channel, all right. This is  
4 transversing over an undefined distance, right, and this, this echo is coming  
5 back to the hybrid. Remember that's what we talked about. And what we  
6 know for a fact is that the signals here are complex, all right. We have a  
7 complex signal as we all learned in electrical engineering. There's  
8 magnitude and there's phase, okay. What's happening here is that the  
9 magnitude and the phase are being affected by the transfer function of this  
10 channel here on the transmission. That's what Dowling is concerned about,  
11 and that's what Dowling is compensating for.

12 JUDGE NAPPI: But when you put them together, isn't Dowling  
13 going to have already adjusted the transmitted signal to account for that  
14 transmit channel and isn't that new, newly created transmitted signal going  
15 to have a different echo characteristic than the first one?

16 MR. LASTOVA: No. And, and I talked about this at length with the  
17 inventors, because what's, what's happening here is that this channel, this  
18 echo again is not the same channel. You're making an assumption that the  
19 Examiner is --

20 JUDGE NAPPI: I'm not looking at the channels. I'm looking at the  
21 signals.

22 MR. LASTOVA: But you have to look at the channels, because that's  
23 what we're modeling. We're modeling the channels, right.

24 JUDGE NAPPI: Claim 1 doesn't say anything about modeling the  
25 channels.

26 MR. LASTOVA: We're modeling the echo --



1 JUDGE NAPPI: The claim 1 says we're -- we have an electronic  
2 circuit configured to do an estimated echo signals based upon the matrix and  
3 coefficients of a transmitted symbol in, in a previously transmitted symbol.

4 MR. LASTOVA: Right. The --

5 JUDGE NAPPI: So if --

6 MR. LASTOVA: -- in, in the frequency domain, right --

7 JUDGE NAPPI: Okay, but if we take Dowling which has modified  
8 that that transmitted signal has both of this product of the transmitted signal  
9 and the previously transmitted signal --

10 MR. LASTOVA: Again.

11 JUDGE NAPPI: -- isn't that what Dowling is doing in this --

12 MR. LASTOVA: No, no. Dowling is saying I'm going to take the --  
13 in the frequency domain, I'm going to take the transmission signal, not the  
14 echo signal, I'm going to take the transmission signal, I'm going to try to  
15 model it --

16 JUDGE NAPPI: That's what you've claimed is the transmission  
17 signal.

18 MR. LASTOVA: Right, but I'm talking about -- I'm trying to  
19 estimate the echo. Dowling is not trying to estimate the echo. Yeah, I have  
20 to --

21 JUDGE NAPPI: I, I agree with you. Ho is --

22 MR. LASTOVA: -- the only, the only signal we have --

23 JUDGE NAPPI: Ho is doing the estimating the echo. What I'm,  
24 what I'm saying is Ho's input to his estimation of the echo is the transmitted  
25 signal.

26 MR. LASTOVA: Ho or Dowling? I'm sorry.

1 JUDGE NAPPI: Ho.

2 MR. LASTOVA: Okay.

3 JUDGE NAPPI: Ho's input is the transmission signal, right?

4 MR. LASTOVA: Right.

5 JUDGE NAPPI: And Dowling modifies the transmission signal?

6 MR. LASTOVA: Right.

7 JUDGE NAPPI: Dowling -- doesn't Dowling's modified  
8 transmission signal meet your description of a product of a first matrix and a  
9 product of a second matrix?

10 MR. LASTOVA: No, I don't think so, because again the assumption  
11 that you're making here is that somehow Dowling is an echo canceller, and  
12 I'm telling you it's, it's not.

13 JUDGE NAPPI: We -- but the, the claim -- the way I see what the  
14 Examiner has said here is we have this echo cancelling circuit that gets an  
15 input, and Dowling teaches you how to change that input, and Dowling's  
16 input just so happens to give you an input that makes, makes this second  
17 piece here.

18 MR. LASTOVA: Right. So then --

19 JUDGE NAPPI: What's wrong with that explanation?

20 MR. LASTOVA: Because the signal that Dowling is looking for and  
21 trying to compensate that would be in Ho's encoder now, right? That's what  
22 you're saying, right, right?

23 JUDGE NAPPI: Um-hum. Well, that's what the Examiner -- I  
24 believe the Examiner said.

25 MR. LASTOVA: Right. So when we do the processing, okay, the  
26 way we're going to do the processing is we're looking to try to look at and

1 see if we can take that transmission signal and compensate it, right, for the  
2 transmission channel. Right, that's what he does. I mean that's not in the  
3 claim. That's what Dowling does, all right. All right.

4 JUDGE NAPPI: Okay, so he's changed his signal to compensate for  
5 the transmission --

6 MR. LASTOVA: So he's changed the signal, and he says I'm  
7 worried about the distortion over this channel, this, this long path I just  
8 showed you here across the page, okay. That's what he's doing, all right.  
9 He takes the signal --

10 JUDGE NAPPI: And tweaks it.

11 MR. LASTOVA: Tweaks it. The tweaking says I want to tweak it for  
12 this long path over here.

13 JUDGE NAPPI: Okay.

14 MR. LASTOVA: Okay. What, what we're doing is we're saying  
15 we're going to take that same signal, but what we're really concerned about  
16 is how do we tweak it so that we compensate for the echo which is a totally  
17 different channel and a totally different --

18 JUDGE NAPPI: But you --

19 MR. LASTOVA: -- set of parameters to have to be dealt with.

20 JUDGE NAPPI: Okay, so let's come back to the claim, and where  
21 does the claim differentiate? You know, I understand what you're saying.  
22 What I'm trying to figure out is I think what the Examiner has said is this  
23 product of the first matrix and the first transmitted symbol and the product of  
24 the second matrix and the previously transmitted symbol. Well, that's all  
25 done in Dowling and that's, if you will, the preprocessing that happens in  
26 encoder 12 of Ho. Now I --

1 MR. LASTOVA: Right.

2 JUDGE NAPPI: -- that you're saying your disclosed purpose of what  
3 you're doing in those matrix is different.

4 MR. LASTOVA: Well, it's the claim purpose. In other words --

5 JUDGE NAPPI: Where is that claim?

6 MR. LASTOVA: Well, right. So line 1, an echo canceller, okay.

7 Line 2, configured to estimate the -- in the frequency domain an echo signal.

8 JUDGE NAPPI: Okay, but --

9 MR. LASTOVA: The next electronic circuit, configured to remove in  
10 the frequency domain the estimated echo signal in -- I mean I, I put in the  
11 frequency domain echo 1,000 times in these claims, okay, because the  
12 Examiner was making this argument early on, and the point I was trying to  
13 make here is that we're talking about an echo signal that we're trying to  
14 model, all right.

15 JUDGE NAPPI: But isn't, isn't Ho teaching in 100 that you're  
16 modeling the echo signal?

17 MR. LASTOVA: Right, in, in the time domain, yes.

18 JUDGE NAPPI: I thought he was doing it in the frequency and the  
19 time domain.

20 MR. LASTOVA: He is doing it in the frequency and -- he's doing  
21 part in the time domain, part in the frequency domain, right?

22 JUDGE NAPPI: Okay.

23 MR. LASTOVA: So the point here is -- and the Examiner tried to  
24 make that argument as well. It's like saying well, I, I hear you. You're  
25 talking on the telephone, and I hear you, Judge Nappi, but I, I hear just part  
26 of an echo. You don't say that. You hear an echo. I hear the whole echo,

1 all right. The point here is that when we talk about an echo, we talk about  
2 the whole echo. We're not talking about compensating for part of the echo.  
3 We talk about the whole echo.

4 So the, the argument here that -- and the Examiner had sort of come  
5 back here, and you probably recall he did that in a supplemental answer, he  
6 backtracked, because he realized he had problems with Dowling. So he's  
7 trying to go back to Ho and figure out well, how can I sort of, you know --

8 JUDGE NAPPI: Yeah, he dropped Dowling and --

9 MR. LASTOVA: Get rid of Dowling and just do it with Ho. And I  
10 understand what he was trying to do, but he was right the first time. That  
11 was a, that was a conventional echo canceller, and he didn't do it all in the  
12 frequency domain. And that was why I tried to pepper the claims within the  
13 frequency domain over and over again, all right.

14 So I, I think the thing we have to understand is that when you think  
15 about this, it's very easy to get, get sucked into the transmission channel and  
16 forget that the echo channel is quite different. The ISI on the, on the echo  
17 channel is quite different. The ICI on the echo channel is different, all right.  
18 It's a different channel. It's a different problem to solve, and it's not  
19 addressed in either of these references, okay.

20 I think it would be helpful as well to look at claim 20 before I run out  
21 of time here, because claims 20 and 30 are different sorts of claims, and I  
22 don't want to have them sort of decided specifically with claim 1. So in  
23 claim 20, for example, we have an echo canceller for use transceiver,  
24 cancelling an echo from a received signal in the frequency domain. So I  
25 make that clear again, all right. We determine an estimate of the echo in the  
26 received signal now, okay, not the transmission signal but the received

1 signal at the near end, all right, using a frequency domain model of an echo  
2 path channel. You asked about a model. There's a model for you, okay.

3 JUDGE NAPPI: Yeah, I understand. Claim 20 is different than claim  
4 1, yeah.

5 MR. LASTOVA: Right, claim 20 is different. Claim 30 is same kind  
6 of claim, only we include ISI and ICI for the echo channel. We compensate  
7 for both there using a frequency domain model.

8 Again, what I want, I'm just going to hit a few, few high points here.  
9 I, I -- as I think I've argued here and you've understood, I think there's a  
10 missing claim element in each of the independent claims, all right. I don't  
11 think there's a teaching of using a frequency domain echo canceller.  
12 However, we've claimed it in claims 1, claims 20, claim 20, 30 for example.  
13 There's no teaching of that estimation of the echo in the frequency domain  
14 of the entire echo, if you will.

15 The other thing that we have to take into account here is that a person  
16 of ordinary skill in the art really wouldn't combine Ho or Chaffee with  
17 Dowling, all right. The problem here is Dowling, Dowling is trying to do  
18 something to simplify the receiver. That's how I explained Dowling in the  
19 beginning. He's trying to simplify the receiver. So if we go ahead and do,  
20 as you suggest, Judge Nappi, and we complicate that signal, and somehow  
21 try to compensate for the echo, now the echo signal is not, not affecting the  
22 far end, right. If I start compensating the thing that goes out on that line for  
23 the echo --

24 JUDGE NAPPI: You're going to change the echo.

25 MR. LASTOVA: I'm going to change the, I'm going to -- my, my  
26 whole attempt to, to pre-equalize what should be received, because the echo

1 is not being received at the far end, is going to mess up what I receive at the  
2 far end. I'm going to need an equalizer to take out the "compensation" for  
3 the echo at the far end.

4 JUDGE NAPPI: You said the echo is not going to reach the far end?

5 MR. LASTOVA: Well, the echo signal is coming through a -- the  
6 exact echo that comes back to the near end, right, is not, is not what's going  
7 to be -- again, because the signal that goes over the transmission channel is  
8 different because of the transmission channel being different than the echo  
9 channel. That's my point here. My point is that you, you can't assume that  
10 what was right at the encoder in Ho is -- output from there is exactly what's  
11 received at the remote station and exactly what's received through the echo  
12 channel at the near station. They're changed between -- because the  
13 channels are different.

14 JUDGE NAPPI: Um-hum.

15 MR. LASTOVA: And my point here is that if I do something so that I  
16 somehow am "compensating" for echo, all right, in Dowling, what I've done  
17 is essentially I've maybe in some way, shape or form, which Dowling  
18 doesn't do, because remember Dowling requires an echo canceller. That's  
19 something I didn't get a chance to point that out here. Dowling says if you  
20 want to do echo cancellation, you need an echo canceller, okay.

21 JUDGE NAPPI: Yeah, well, and I think that's what the Examiner has  
22 tried to do. He said okay, well, Dowling says have an echo canceller, and  
23 Ho teaches an echo canceller, so let's stick the two together.

24 MR. LASTOVA: Right, but my point here is that okay --

25 JUDGE NAPPI: I'm doing it --

1           MR. LASTOVA: -- he needs an echo canceller, because he  
2 recognizes that the transmission channel and the echo channel are totally  
3 different, so I still need an echo canceller. But if I go ahead and try to  
4 compensate for the echo, you know, using a Dowling sort of Ho  
5 combination, I'm going to mess it up down here for the receiver. That's  
6 going to increase the cost of my receiver. It's going to increase the  
7 complexity.

8           JUDGE NAPPI: Well, wait a second. Wait a second. It would only  
9 mess it up down at the receiver if you --

10          MR. LASTOVA: The far end --

11          JUDGE NAPPI: -- the far end if you changed your transmission  
12 based upon the echo which I don't think is what Ho's doing. Ho's  
13 subtracting --

14          MR. LASTOVA: Right.

15          JUDGE NAPPI: -- the echo from the received --

16          MR. LASTOVA: Well, you're asking me and the Examiner was  
17 asking to somehow modify Ho with Dowling.

18          JUDGE NAPPI: Yeah, well, I think what the Examiner has tried to  
19 say is you take the whole circuit of, of Dowling and, and slip it in place of  
20 the encoder 12 of Ho.

21          MR. LASTOVA: Right.

22          JUDGE NAPPI: And so which case Dowling is modifying the  
23 transmitted signal that goes out, and then he's modifying what he's receiving  
24 and has received to try to delete whatever echo might have come through  
25 and he's recognizing that --



1 MR. LASTOVA: No, no, no. The echo is the echo -- he has an echo  
2 canceller.

3 JUDGE NAPPI: Ho teaches an echo canceller.

4 MR. LASTOVA: Right, and so it's -- but if you put the precoder --

5 JUDGE NAPPI: Into 12.

6 MR. LASTOVA: -- into 12, right --

7 JUDGE NAPPI: Yeah.

8 MR. LASTOVA: And we know that there has to be an echo  
9 canceller, all right --

10 JUDGE NAPPI: Which is what Ho has.

11 MR. LASTOVA: Which is what Ho has, right.

12 JUDGE NAPPI: Yeah.

13 MR. LASTOVA: So I've compensated now for the signal --

14 JUDGE NAPPI: That's compensating for the outgoing. It's not  
15 affecting the outgoing in any way, shape or form for echo.

16 MR. LASTOVA: Right.

17 JUDGE NAPPI: It's not -- the echo is on --

18 MR. LASTOVA: So you're left with a regular -- you're left with Ho  
19 or a regular, some other echo canceller that admittedly by the Examiner  
20 doesn't do what we claim. It doesn't compensate for the echo completely in  
21 the frequency domain. It says okay, I'll do a little bit in the time domain.  
22 I'll do a little bit in the, in the frequency domain, and then I'll put them all  
23 together, and I'll remove it, okay. That's not the same thing.

24 JUDGE NAPPI: Why?

25 MR. LASTOVA: Why?

26 JUDGE NAPPI: Yeah. I mean it --

1 MR. LASTOVA: It's like saying -- it was like my -- it was my exact  
2 question to you. It's like me saying can you hear part of, of the echo of my  
3 voice? Not really. You can hear the echo but you -- what good would it be  
4 for you to have part of an echo removed? I mean it's sort of, it's sort of --  
5 it's the argument only we could have in this room. An engineer wouldn't  
6 have that argument. And so we're trying to remove the echo --

7 JUDGE NAPPI: No, you -- because you might -- well, the claim  
8 doesn't say that -- it doesn't say remove the entire echo. It says removing an  
9 echo.

10 MR. LASTOVA: It says the echo.

11 JUDGE NAPPI: The echo.

12 MR. LASTOVA: The echo, right, and what I'm saying is that a  
13 reasonable person, okay, a broadest reasonable interpretation would not say  
14 to themselves oh, okay, well, let's just ignore what Ho is saying here. Let's  
15 ignore all the language we have in the frequency domain and, and talk about  
16 just part of the echo. I just don't think -- people don't talk like that. People  
17 don't think like that. Only examiners can think like that because, of course,  
18 they're trying to come up with, come up with a rejection that they don't have  
19 on the merits.

20 So what I'm saying here is we need to be careful about how loose and  
21 fast we are with the language and keep it in context, a person of ordinary  
22 skill in the art in light of the specification, in light of the claims. We have to  
23 do all of that, and in light of all the teachings that we have in those  
24 references which are being twisted and contorted to try to get to where we  
25 are right now. And that's, that's the point I'm trying to make here is that --  
26 my, my final point is that we're missing features but we're also -- we don't

1 really have a good combination here. We're stretching Dowling to the point  
2 where when we put Dowling into the situation you've just described, we're  
3 focusing on -- you're focusing on Ho. I'm focusing on the combination,  
4 does it make sense, and the problem is it really undermines what Dowling is  
5 trying to do, because what Dowling is trying to do is make for a very, very  
6 simple low-complexity receiver. And I think what's going to happen in this  
7 kind of context is if we start talking about how we're going to be  
8 compensating for echoes, I think that's going to make a problem. But even  
9 if you ignore that, I still think we're missing feature. It's completely in the  
10 time domain, and it's an echo path channel.

11 I've gone over my time. I apologize. Thank you very much.

12 JUDGE NAPPI: I have one quick question for you and it's not to do  
13 with the -- it's we seem to have gotten two complete sets of appeal  
14 documents here. You went through the Appeal Brief, the Reply Brief, and  
15 then we got a whole new set of Examiner's Answer and Reply Brief which  
16 is why we didn't have the Reply brief you were pointing to with the figures  
17 in it.

18 MR. LASTOVA: Okay.

19 JUDGE NAPPI: Do you know -- can you enlighten us as to why that  
20 happened?

21 MR. LASTOVA: Well, as you know, the case was filed back in 2000.  
22 I pestered the Examiner. To be honest with you, what ended up happening  
23 was the thing sat around so long back at the group that by the time we finally  
24 got through all of this a lot of the appeal rules actually changed, and so we  
25 had to go back and reformat. The heading wasn't right. All the things that  
26 are being used, of course, to slow down the appeal process worked very

1 effectively in this case, and we ended up having to resubmit things. And  
2 then the Examiner finally said to me -- after he had resubmitted his Answer,  
3 he just called me up on the phone and said would you -- for whatever reason,  
4 I have to have the Appeal Brief again. Could you submit it again? I said  
5 okay, and I did it again.

6 So we talked on the phone several times. I pestered him, and that's  
7 why we do. I'm a little surprised you don't have the first Reply Brief.

8 JUDGE NAPPI: It's a question of which -- how we put the file -- I  
9 mean I'm -- it's a different system I'm looking in right now.

10 MR. LASTOVA: Okay.

11 JUDGE NAPPI: But I'm just wondering, it seems like we had the  
12 Reply Brief. What we have is the most recent set of briefs.

13 MR. LASTOVA: Right.

14 JUDGE NAPPI: That's what we typically look at.

15 MR. LASTOVA: Well, there -- okay, so it should go backwards --

16 JUDGE NAPPI: So there was an Answer submitted -- there was an  
17 Answer written after that February Reply Brief?

18 MR. LASTOVA: Right, right, and he also had a -- and his -- and he  
19 also had a Supplemental Answer.

20 JUDGE NAPPI: A Supplemental -- yeah.

21 MR. LASTOVA: So you should have --

22 JUDGE NAPPI: And my question really is what happened to trigger  
23 that? You have your --

24 MR. LASTOVA: Basically got lost in his group. Didn't get handled  
25 right away and over the course of -- and because of -- I, I submitted a Reply.  
26 He submitted a Supplemental Answer, okay.

1 JUDGE NAPPI: Um-hum.

2 MR. LASTOVA: That came before his new Answer, all right. I then  
3 came back with a Sur-reply. All right, then it got sort of lost I guess because  
4 people got confused with all these papers, called up, found out -- the  
5 Examiner says oh, geez, you got to submit a new, a new Brief, because it  
6 doesn't have all the right headings exactly as the way they want it now. So I  
7 did that. We finally got up here. It took 2 or 3 years to get the, the briefing  
8 correct.

9 JUDGE NAPPI: Yeah, it looks like it's, it's been a while since the  
10 request for oral hearing. Good.

11 MR. LASTOVA: Right.

12 JUDGE SAADAT: The question is if you resubmitted the Appeal  
13 Brief -- the Reply Brief why the, the first Reply Brief was not resubmitted.

14 MR. LASTOVA: Well, to be honest with you, I didn't know that was  
15 something that was needed to be done. Because of course, I always -- no  
16 one objected to the form of the Reply Brief or of the Sur-reply. There was  
17 just an objection with respect to the form of the Brief, not to the content of  
18 the Brief. So the --

19 JUDGE NAPPI: You changed the content.

20 MR. LASTOVA: I -- well, I changed the headings.

21 JUDGE NAPPI: Well, you took out the figures, because the figures  
22 weren't in the later Reply Brief.

23 MR. LASTOVA: I'm talking about the --

24 JUDGE NAPPI: The figure you just --

25 MR. LASTOVA: -- I'm talking about the -- I'm talking about my  
26 initial Brief. The initial Brief, okay, what ended up happening was I had to

1 put new headings in, all right, for every ground of rejection that -- which is  
2 something that occurred after the fact, okay, and they, they didn't pick it up  
3 the first time. In the -- but the, the -- my initial Reply Brief, there was no  
4 objection to that, and then my Sur-reply, there was no objection to that.  
5 There was no noncompliance. The only objections were with respect to my  
6 initial briefing, and it was with respect to formatting issues.

7 JUDGE RUGGIERO: Okay.

8 JUDGE NAPPI: Okay.

9 JUDGE SAADAT: All right.

10 MR. LASTOVA: All right. Thank you very much for your attention.  
11 I'm sorry for going overtime.

12 (Whereupon, the hearing concluded at 9:31 a.m. on June 9, 2009.)